

CLAIM AMENDMENTS

The following listing of the claims replaces all prior versions, and listings, of the claims in the application.

1-2. (canceled)

3. (previously presented) A method of placing a component, the method comprising:
placing a component into a nest, said component having leads and an alignment-
indicating physically asymmetric fiducial marker, said physically asymmetric fiducial marker
defining a bottom surface of said component that is asymmetric with respect to a top surface of
said component, said nest having an asymmetrically shaped recess corresponding to the
physically asymmetric fiducial marker on the component;

detecting whether the physically asymmetric fiducial marker on the component mates
with the asymmetrically shaped recess; and

placing the component on the substrate when mating of the physically asymmetric
fiducial marker with the asymmetrically shaped recess is detected.

4. (canceled)

5. (previously presented): The method of claim 3, wherein said detecting further
comprises distinguishing when the component is in a predetermined alignment.

6. (withdrawn) The method of claim 5, wherein said detecting further comprises:
creating a low pressure region in the recess; and
sensing a pressure in the low pressure region.

7. (previously presented) The method of claim 5, wherein said detecting further comprises sensing when a component contacts a surface of said recess.

8. (canceled)

9. (previously presented) The method of claim 3, wherein detecting further comprises:
directing a pattern of radiation above and parallel to the recess in the nest;
receiving the radiation pattern that passes the recess;
comparing the received radiation pattern to a predetermined radiation pattern; and
determining whether the fiducial marker is mated with the asymmetrically shaped recess.

10-53. (canceled)

54. (previously presented) A method of placing a component, the method comprising:
placing a component in a nest, said component having an alignment-indicating physically asymmetric fiducial marker, said asymmetric fiducial marker defining a bottom surface of said component that is asymmetric with respect to a top surface of said component, said nest having a surface and an asymmetric recess defined therein;
detecting alignment of the component in the recess;
comparing a detected alignment with a predetermined alignment; and
placing the component to a substrate when the detected alignment corresponds to the predetermined alignment.

55. (withdrawn) The method of claim 54, wherein said detecting further comprises focusing an alignment detector on the surface of the nest.

56. (withdrawn) The method of claim 54, wherein said detecting further comprises focusing an alignment detector above the nest.

57. (withdrawn) The method of claim 54, wherein said detecting further comprises focusing an alignment detector parallel to and adjacent the surface of the nest.

58. (withdrawn) The method of claim 54, further comprising picking the component from the nest.

59. (withdrawn) The method of claim 58, further comprising aligning the component.

60. (withdrawn) The method of claim 59, further comprising replacing the component in the recess of the nest.

61. (canceled)

62. (currently amended) A method of placing a component, the method comprising:
forming a recess in a nest for mating with an alignment-indicating physical shape of a fiducial marker;

placing a component in the recess, said component having leads and ~~a~~ the fiducial marker, said fiducial marker defining a bottom surface of said component that is asymmetric with respect to a top surface of said component, the fiducial marker of said component comprising an alignment-indicating physical shape for indicating alignment of said leads upon mating with the recess;

detecting whether the alignment-indicating physical shape of the fiducial marker mates with the recess; and

placing the component on the substrate when mating of the alignment-indicating physical shape of the fiducial marker with the recess is detected.

63. (previously presented) The method of claim 62, wherein said detecting further comprises determining whether the component extends beyond the surface of the nest.

64. (previously amended) The method of claim 62, wherein said recess corresponds to a beveled edge of the component.

65-70. (canceled)

71. (withdrawn) A method of placing a component having leads and an alignment indicating fiducial marker, comprising:

directing a pattern of radiation across a nest having an asymmetric recess corresponding to an asymmetric shape of the component;

sensing the radiation pattern passing across the nest;

detecting the alignment of the fiducial marker on the component;

comparing the detected fiducial alignment with a predetermined fiducial alignment; and

placing the component to a substrate when the detected fiducial alignment corresponds to the predetermined fiducial alignment.

72. (withdrawn) The method of claim 71, wherein said directing further comprises disrupting the radiation pattern when a component is misaligned in the nest recess.

73. (withdrawn) The method of claim 71, wherein said comparing further comprises comparing the radiation pattern passing across the nest to a known radiation pattern.

74-82. (canceled)